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claim:

1. A fieldbus component comprising:  
a data link layer,  
a physical layer constituted for high speed data transmission,  
an interface connecting said data link layer and said physical layer, and  
a layer for matching said data link layer, which operates with a fieldbus protocol, to  
said physical layer.
2. The fieldbus component according to claim 1, in which said interface comprises a  
medium-independent interface.
3. The fieldbus component according to claim 1, in which said data link layer  
comprises a medium access control layer, a basic connection layer, a peripheral  
data connection layer and a network management layer.
4. The fieldbus component according to claim 2, in which said data link layer  
comprises a medium access control layer, a basic connection layer, a peripheral  
data connection layer and a network management layer.
5. The fieldbus component according to claim 1, in which said physical layer  
constituted for high speed data transmission is constituted according to the IEEE  
802.3u standard of the Fast Ethernet.
6. A communication system, comprising at least one fieldbus component according to  
claim 1 and a high speed data transmission medium, to which said at least one  
fieldbus component is connected.
7. The communication system according to claim 6, in which said high speed data

transmission medium has a linear structure and said fieldbus component is actively coupled to said high speed data transmission medium.

8. The communication system according to claim 6, in which said high speed data transmission medium has at least one branch.
9. A process for transmission of data over a high speed data transmission medium to which several fieldbus components are coupled, comprising the following process steps:
  - (a) combining data to be transmitted into a transmission frame in a data link layer of a fieldbus component, which uses a fieldbus protocol;
  - (b) matching and passing on said transmission frame to a physical layer that is constituted for high speed data transmission; and
  - (c) feeding said data to be transmitted to said high speed data transmission medium via said physical layer.
10. The fieldbus component according to claim 2, in which said physical layer constituted for high speed data transmission is constituted according to the IEEE 802.3u standard of the Fast Ethernet.
11. A communication system, comprising at least one fieldbus component according to claim 2 and a high speed data transmission medium, to which said at least one fieldbus component is connected.
12. A communication system, comprising at least one fieldbus component according to claim 3 and a high speed data transmission medium, to which said at least one ~~fieldbus component is connected.~~

